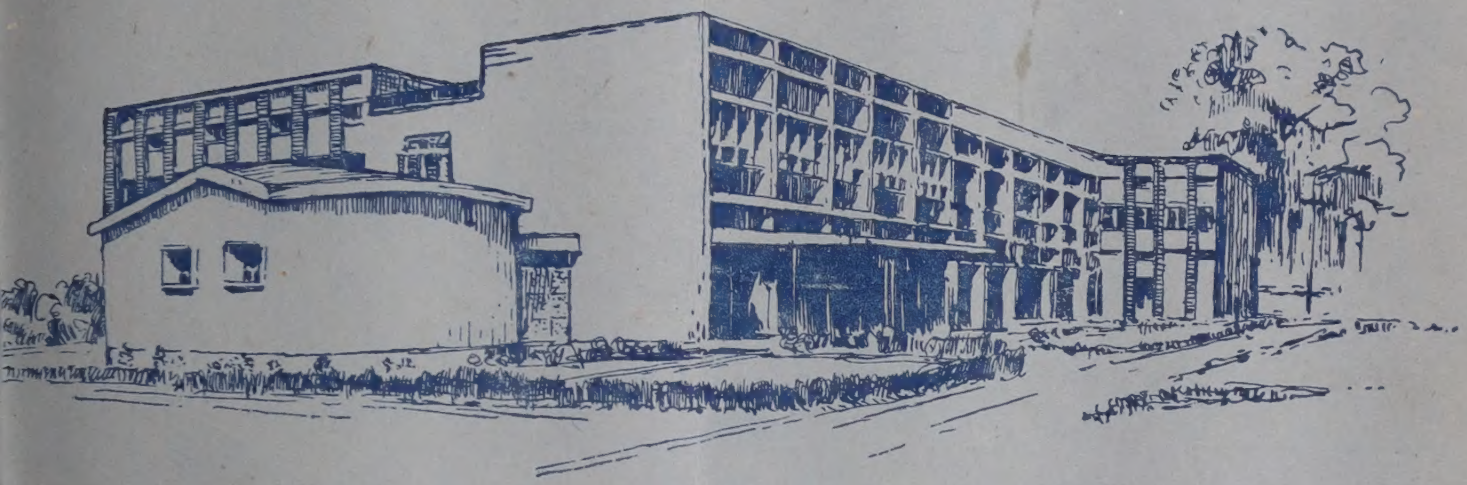
BLIOGRAPHY OF INDIAN FISHERIES



Vol. 11, No. 3
September, 1972

CENTRAL INLAND FISHERIES RESEARCH INSTITUTE
(Indian Council of Agricultural Research)
BARRACKPORE, WEST BENGAL
INDIA

BIBLIOGRAPHY OF INDIAN FISHERIES

(World-List Abbreviation : Biblphy Indian Fish.)

Volume 11, No. 3 September,1972

Complied
by

B.N. Saigal
Amitabha Ghosh
P.K. Chakraborti
A.K. Datta
Anjali Ghosh (Miss)

CONTENTS

I.	Entries	....	36 - 58
II.	Author Index	....	A 6 - A 9
III.	Subject Index	....	S 4 - S 5
IV.	Taxonomic Index	....	T 12 - T 17
V.	Serial Index	....	P 3 - P 4

H.B. Sutar
&
D. Chatterjee.

(**********)

I. ENTRIES

121. Annigeri, G.G. 1969
(Central Marine Fisheries Research Institute, Substation, Karwar).
Fishery and biology of the oil sardine at Karwar. Indian J. Fish., 16(1 & 2):35-50.

The fluctuations of the oil sardine fishery at Karwar during the years 1964-1965 & 1967-1968 have been discussed. The hydrological factors, influencing fishery, are also dealt with. Length frequency studies of the fish have been described. 19 ref.

122. Anon 1972
News and notes. Seafd. export J., 4(6):33-35.

Contains notes on : "Laccadives to have turtle rearing farm", "Fishing with electricity etc."

123. Antony Raja, B.T. 1969
(Central Marine Fisheries Research Institute, Substation, Karwar, Mysore State, India).
Patterns of sex ratio in the oil sardine, Sardinella longiceps Val., at Calicut. Indian J. Fish., 16(1 & 2):99-109.

Gives an account of maturity, month of capture and length groups, sex-ratio and the period of dominance of different sexes of S. longiceps. 17 ref.

124. Aravindan, C.M. & K.G. Padmanabhan 1972
(Department of Aquatic Biology and Fisheries, University of Kerala, The Aquarium, Trivandrum).
On a teleostean oocyte with two germinal vesicles. Curr. Sci., 41(7):256-257.

Describes the presence of two germinal vesicles in Tilapia mossambica which, according to the authors is a very rare instance of an abnormal Oocyte. 4 ref.

125. Banerjee, M.K.[1] & R.D. Chakrabarty[2] 1969
([1]Central Inland Fisheries Research Institute, Barrackpore. [2] Central Inland Fisheries Research Substation, Cuttack-1).
Drift gill-netting in Lower Sunderbans, West Bengal. Indian J. Fish., 16(1 & 2):75-81.

Describes the effectiveness of gill-nets of three different mesh sizes in the capture of commercially important fishes like H. ilisha, S. guttatus, P. argenteus etc. 5 ref.

126. Banerjee, R.K.[1], G.S. Singit[2] & P. Roy[3] 1969
([1&3]Central Inland Fisheries Research Institute, Barrackpore, West Bengal. [2]Fisheries Development Officer, Tungabhadra Dam, Mysore State).
Some observations on the use of poultry manure as fertilizer in rearing major carp fry. Ibid, 16(1 & 2): 29-34

Discusses the results of experiments, conducted in cement cisterns, using poultry manure with cowdung as fertilizer for rearing of carp fry. The authors have stated the poultry manure to be a self-contained organic manure having the characteristics of both organic and inorganic manures. 5 ref.

127. Barua, A.B. & H. Tombi Sing 1972
(Department of Chemistry & Zoology, Gauhati University, Gauhati-14).
Vitamin A_2 in liver oils of freshwater fishes. Indian J. Biochem. Biophys., 9(1):128-130.

Describes the results of spectrophotometric determination of vitamins A_1 and A_2 in some species of freshwater fishes. The authors have reported the presence of anhydrovitamin A_2 and a new chromogen in the liver oil of Eutropiichthys vacha. 16 ref.

128. Bhatt, V.S. 1971
(National Institute of Oceanography (CSIR), Miramar, Panaji (Goa)).
Studies on the biology of some freshwater fishes part VI. Mystus cavasius (Ham.). Hydrobiologia, 38(2):289-302.

Gives an account of sex-ratio, sex-dimorphism, maturation cycle, spawning pariodicity and the food and feeding habit of M. cavasius. 8 ref.

129. Bhimachar, B.S. 1968
('Jaidev', Flat 10, Block-1, 141-151 Prabhat Colony, Santacruz (East), Bombay).
Production of quality fish seed for fish culture.
(Proceeding of the seminar on 'Production of quality fish seed for fish culture' sponsored by ICAR at the CIFRI, Barrackpore on November 1 & 2, 1968: 14-19).

Some measures have been suggested for the production of quality fish seed and improvement of the aquaculture industry.

130. Chakraborty, D.P., A.C. Nandy & M.T. Philipose 1972
(Central Inland Fisheries Research Substation, Cuttack)
Barringtonia acutangula (L.) Gaertn. as a fish poison.
Indian J. exp. Biol., 10(1):78-80.

Reports that stem bark (20 ppm), seed (15 ppm) and root bark (10-15 ppm) powder of B. acutangula are effective in clearing unwanted fishes from nursery ponds without affecting the plankton. The authors have stated that the powder is also effective against the notonectid Anisops sp. 12 ref.

131. Chaudhuri, H. 1968
(Central Inland Fisheries Research Substation, 19, Cantonment Road, Cuttack-1).
Production of fish seed by induced breeding.
(Proceeding of the seminar on 'Production of quality fish seed for fish culture' sponsored by ICAR at the CIFRI, Barrackpore on November 1 & 2, 1968: 270-282).

132. Chauhan, B.S.[1] & B.Y. Khoche[2] 1971
(1 Zoological Survey of India, Calcutta.
[2]Department of Zoology, Government College, Seoni, M.P.).
A new species of monogenetic trematode of the genus Paramazocraes Tripathi from India, with a note on the clamp structure in the family Mazocraeidae.
Proc. Zool. Soc., Calcutta, 24(1):77-80.

A new species of monogenetic trematode, recovered from the gills of Thrissocles dussumieri, from the western coast of India, has been described. The affinities of the new species have also been discussed. 4 ref.

133. Chennubhotla Krishnamurthy, V.S. 1969
(Central Marine Fisheries Research Institute, Sub-station, Calicut - 5, Kerala, India).
Distribution of phytoplankton in the Arabian sea between Cape comorin and Cochin. Indian J. Fish., 16(1&2):129-136. 10 ref.

134. Choodamani, N.V. 1968
(Deputy Director of Fisheries, Madras).
Riverine fish seed collection in Madras.
(Proceeding of the seminar on 'Production of quality fish seed for fish culture' sponsored by ICAR at the CIFRI, Barrackpore, on November 1 & 2, 1968 : 160-171).

The methods for collection of spawn, fry and fingerlings from the Cauvery river have been described. A description of the geographical features of the river and the effect of the two monsoons on the flood conditions of the river has been described. 2 ref.

135. Choudhuri, N.K. 1972
(Deputy Director of Fisheries (Research), Govt. of West Bengal).
Matsya-bij khamarer parichalana vyavastha (in Bengali). Souvenir, Silver Jubilee of Indian Indipendence, Directorate of Fisheries, West Bengal : 4-10 (Bengali part).

Deals with the construction of fish farm, its management, collection of seed etc.

136. Choudhury, P.C. 1971
(Zoology Department, University of the West Indies, Kingston, Jamaica).
Complete larval development of the palaemonid shrimp Macrobrachium carcinus (L.) reared in the laboratory (Decapoda, Palaemonidae). Crustaceana, 20(part 1): 51-69. 8 ref.

137. Das, K.N. 1968
(Fish Seed Syndicate Ltd., Howrah).
The collection of naturally produced fish seed in rivers. Proceeding of the seminar on 'Production of quality fish seed for fish culture' sponsored by ICAR at the CIFRI, Barrackpore, on November 1 & 2, 1968 : 82-91.

The fish-seed resources of Indian major carps and the methods for their collection in the rivers and their development have been discussed.

138. David, A. 1968
(Central Inland Fisheries Research Institute, Lacustrine Unit, Tungabhadra Dam, Mysore State).
Fish seed resources in relation to reservoirs.
Ibid, : 186-203.

Results of fish "seed" collections to evaluate fish breeding and their recruitment trends in relation to Tungabhadra, Vahivilassagar, Krishnarajasagar, Mettur and Bhavanisagar reservoirs during 1963-66 with some observations on Tilaiya reservoir have been described. 7 ref.

139. Davis, T.Antony & C. Ramanujacharyulu 1971
(Indian Statistical Institute).
Stastistical analysis of bilateral symmetry in plant organs. Sankhya, B. 33(3 & 4):259-290.

Laws operating in the expression of bilateral symmetry have been discussed in relation to certain organs of plants. 38 ref.

140. De, S. 1972
(District Fishery Officer, Maldah, West Bengal)
Anste katha (in Bengali). Souvenir, Silver Jubilee of Indian Indipendence, Directorate of Fisheries, Govt. of West Bengal:1-3 (Bengali part).

141. Desai, B.N. 1971
(Biological Oceanography Division, National Institute of Oceanography, Cochin, Kerala).
Dominance of mollusca in benthic population off Cochin. J. Bombay nat. Hist. Soc., 68(2): 355-362.

Importance of molluscan fauna, constituting the food of larger animals, in the benthic population in and around Cochin harbour is discussed. 7 ref.

142. Devadoss, P. 1969
(Central Marine Fisheries Research Institute, Porto Novo, Tamil Nadu).
Maturity and spawning in Otolithus ruber (Scnn.) and Johnius dussumieri (C & V.). Indian J. Fish., 16(1 & 2):117-128. 18 ref.

143. Devaraj, K.V. 1972
(Fisheries College, Mangalore-1).
Resting and locomotory behaviour of Clarias batrachus (Linn.). Curr. Sci., 41(7):268-69. 3 ref.

144. Dhawan, Rajinder M., P.V.S. Namboothiri & V.G. Gopinathan 1969
(Directorate of Fisheries, Panaji, India).
Results of trolling line operations in Goa waters during 1965-68. Indian J. Fish., 16(1 & 2):181-187.

Describes the results of trolling line operations conducted in Goa waters by the Directorate of Fisheries, Panaji, during the years 1965-68. 2 ref.

145. Dubey, G.P., Arjun Singh & M.R. Pandey 1968
(Directorate of Fisheries, Govt. of Madhya Pradesh, Bhopal).
Fish seed production from dry-bundhs and its economics. (Proceeding of the seminar on "Production of quality fish seed for fish culture" sponsored by ICAR at the CIFRI, Barrackpore, on November 1 & 2, 1968: 206-220. 5 ref).

146. Durve, V.S. & S.K. Dharma Raja 1969
(Central Marine Fisheries Research Institute, Mandapam camp, South India).
On the fatness of the clam, Meretrix casta (chemnitz). Indian J. Fish., 16(1 & 2):170-173.

147. Ernakulam, Central Institute of Fisheries Technology.
(Central Institute of Fisheries Technology(Indian Council of Agricultural Research) Post Box No. 1039 Chittor Road, Ernakulam, Cochin-11).
Half yearly report July-December, 1971 : 52p.

148. Ghosh, N. 1972
Matsya bij chasher tukro katha (in Bengali)
Sourvenir, Silver Jublilee of Indian Indipendence,
Directorate of Fisheries Govt. of West Bengal:
11-12 (Bengali part).

149. Ghosh, S.N. 1972
(Deputy Director of Fisheries, West Bengal).
The Scientific aspects of fisheries development.
Souvenir, Silver Jubilee of Indian Indipendence.
Directorate of Fisheries Govt. of West Bengal:
23-27.

A general account of fisheries research in West Bengal has been given.

150. Gokhale, S.V. 1972
(Agricultural Finance Corporation Ltd., Bombay-1).
Deep sea fishing - Foreign collaboration - a necessity.
Seafd. export J. 4(4):13-19.

151. Gopalakrishnan, V. 1968
(Central Inland Fisheries Research Institute,
Barrackpore, West Bengal, India).
Collection of brackishwater fish seed from the
Hooghly Estuary. (Proceeding of the seminar on
'Production of quality fish seed for fish culture'
sponsored by ICAR at the CIFRI, Barrackpore on
November 1 & 2, 1968 : 232-247).

152. _____ 1972
(Central Inland Fisheries Research Institute,
Barrackpore, West Bengal).
Status of culture of brackishwater and freshwater
prawns in India. Souvenir, Silver Jubilee of
Indian Independence, Directorate of Fisheries,
Govt. of West Bengal:13-16.

153. Gopalakrishnan, V. & R.M. Rao 1968
(Central Inland Fisheries Research Institute, Barrackpore, West Bengal).
Observations on the distribution of juveniles of brackishwater prawns in the Hooghly-Matlah estuarine system. (Proceeding of the seminar on "Production of quality fish seed for fish culture" sponsored by ICAR at the CIFRI, Barrackpore on November 1 & 2, 1968: 248-261.

The seasons of occurance, distribution, size range etc. of the brackishwater prawns of the Hooghly-Matlah estuarine system have been described. 11 ref.

154. Gopalakrishnan, V. & V.G. Jhingran 1967
(Central Inland Fisheries Research Institute, Barrackpore).
Role of fish pathological studies in increasing fish production. Proceedings of the symposium on Science and India's food problem organised by Indian Council of Agricultural Research and Indian National Science Academy: 151-155.

The problem of prevention and control of fish diseases is of great importance in the present context of food shortage in the country. The incidence and magnitude of fish diseases is related to the density of stocking, food availability, intensity of pond fertilisation, physico-chemical conditions of water, etc. Effective control measures for same important diseases are known & work on more is being conducted. 9 ref.

155. Govindan, T.K. 1972
Harpodon nehereus. Seafd. export J., 4(6):21-24.

Gives an account of the catch-statistics, fishing methods, preservation and food habits of H. nehereus.

156. Jacob, P.G. 1972
(Central Marine Fisheries Research Institute, Cochin-11).
Can we culture shrimps to increase our production. Ibid,. 4(4):21-24.

157. Jhingran, A.G. 1971
(Central Inland Fisheries Research Institute, P.O. Turra, Dist. Mirzapur).
Validity of scale as age indicator in Setipinna phasa (Hamilton) and interpretation of 'Salmonoid bands' and 'Spawning marks'. Proc. Indian nat. Sci. Acad., 34(4):234-262.

Describes the age and growth of S. phasa as evident from the study of the scales. The author reports that the scales show two kinds of rings - the 'Salmonoid bands' and 'Spawning marks'. The maximum rate of growth was observed in the first year of the life of the fish. 44 ref.

158. Jhingran, V.G. 1967
(Central Inland Fisheries Research Institute, Barrackpore, West Bengal).
Role of inland fishery research in India in increasing fish production. Proceedings of the symposium on Science and India's food problem organised by Indian Council of Agricultural Research & Indian National Science Academy:127-138. 66 ref.

159. _____ 1968
(Central Inland Fisheries Research Institute, Barrackpore, West Bengal).
Riverine fish seed resources and their exploitation in India. Proceeding of the seminar on 'Production of quality fish seed for fish culture' sponsored by ICAR at the CIFRI, Barrackpore on November 1 & 2, 1968 : 56-80.

Existing seed resources of the different river systems and the methods of their exploitation are discussed. Spawn availability in relation to flood and hydrobiological conditions obtaining in the rivers is also discussed. Suggestions for the growth of pond culture industry have been made. 35 ref.

160. _____ 1972
(Director, Central Inland Fisheries Research Institute, Barrackpore, West Bengal).
Pisciculture - A delayed revolution in India. Souvenir, Silver Jubilee of Indian Indipendence, Directorate of Fisheries, West Bengal: 10-12.

161. Jhingran, V.G. & S.D. Tripathi 1967
(Central Inland Fisheries Research Institute, Barrackpore, West Bengal).
Recent researches leading to increased fish production through scientific farming in inland waters. Proceedings of the symposium on Science and India's food problem organised by Indian Council of Agricultural Research and Indian National Science Academy : 139-150. 49 ref.

162. Jyoti, M.K. & Y.R. Malhotra 1972
(Department of Zoology, University of Kashmir, Srinagar).
Studies on the fecundity of Schizothorax niger Heckel from Dal lake (Kashmir). Indian J. exp. Biol., 10(1):74-76.

Relationship between fecundity and body length, fecundity and body weight & fecundity and ovary weight of S. niger have been discussed in this paper. 10 ref.

163. Kagwade, P.V. 1969
(Central Marine Fisheries Research Institute, Substation, Bombay, India).
Food and feeding habits of Polynemus heptadactylus Cuv and Val. Indian J. Fish., 16(1&2):188-197. 19 ref.

164. _____ 1969
(Central Marine Fisheries Research Institute, Substation, Bombay-1, India).
A preliminary study on the biology and fishery of Muraenesox talabonoides (Bleeker) from Bombay and Saurashtra waters. Ibid, 16(1&2):137-150.

Regional & seasonal abundance, depthwise distribution, food and feeding habit, maturity and spawning of the eel have been dealth with. 12 ref.

165. Kant Shashi[1] & P. Kachroo[2] 1971
([1]Department of Biosciences, University of Jammu, Jammu (Jammu & Kashmir), India. [2]Department of Botany, University of Kashmir, Srinagar-6).
Phytoplankton population dynamics and distribution in two adjoining lakes in Srinagar. Proc. Indian nat Sci. Acad., B, 37(4):163-188.

Bathymetric distribution of phytoplankton and associated hydrobiological factors in two lakes of Kashmir during 1968-69 are presented. 35 ref.

166. Kewalramani, K.M. 1972
(Superintendent of Fisheries, (Training) Okha Gujarat, India).
Demersal fishery of West Coast with relation to fishing conducted off Jakhau Port in kutch region. Seafd. export J., 4(5):9-13.

167. _____ 1972
(Superintendent of Fisheries, Okha, Gujarat, India).
Scope of development of freshwater fisheries in Panchmahal district of Gujarat state. Ibid, 4(6):25-28.

168. Khan, A.A. & A.Q. Siddiqui 1971
(Department of Zoology, Aligarh Muslim University, Aligarh, India).
Primary production in a tropical fish pond at Aligarh, India. Hydrobiologia, 37(3-4):447-456. 29 ref.

169. Khan, Jamil A & A. Qayyum Siddique 1971
(Department of Zoology, Aligarh Muslim University Aligarh, India).
Water, nitrogen and phosphorus in freshwater plankton. Ibid, 37(3-4):531-536.

170. Khan, R.R. 1972
Dolphins - the intelligent animals. Sci. Reptr., 9(4):184-186.

The article deals with the feeding habits, social behaviour etc. of the dolphins.

171. Krishnamurthy, C.G., M.R. Rajasekharasetty & N.H. Gopal Dutt 1972
(Department of Post-graduate, studies & Research in Zoology, University of Mysore, Mysore-6).
Oocytes of Rasbora daniconius Ham.: chemical composition and fate of yolk vesicles. Indian J. exp Biol., 10(1):29-33. 22 ref.

172. Kulkarni, C.V. 1968
(Department of Fisheries, Government of Maharashtra, Bombay-2).
Production of high quality fish seed in Maharashtra. Proceeding of the seminar on 'Production of quality fish seed for fish culture' sponsored by ICAR at the CIFRI, Barrackpore on November 1 & 2, 1968:38-52. 27 ref.

173. Malhotra, J.C., H.P.C. Shetty & K.K. Ghosh 1968
(Riverine Substation, Allahabad of the CIFRI, Barrackpore).
Fish spawn resources of river Yamuna. (Proceeding of the seminar on 'Production of quality fish seed for fish culture' sponsored by ICAR at the CIFRI, Barrackpore, on November 1&2, 1968:124-159). 5 ref.

174. Mathew, K.J. & A.K. Kesavan Nair 1969
(Central Marine Fisheries Research Institute, Cochin-11, India).
Exploratory survey along the south-west coast of India with reference to the use of try-net. Indian J. Fish., 16(1&2):110-116.

The results of exploratory survey for the assessment of prawn resources along the south-west coast of India during 1967 are presented. 3 ref.

175. Mitra, G.N. 1968
(Joint Commissioner, Fisheries, Ministry of Food & Agriculture, Govt. of India, New Delhi)
Production of quality fish seed of Indian major carps in the Mahanadi river system in orissa.
(Proceeding of the seminar on 'Production of quality fish seed for fish culture' sponsored by ICAR at the CIFRI, Barrackpore, on November 1&2, 1968:20-36).

An account of fish-seed collection methods relationship of seed abundance with water current, temperature, hight of flood and phases of the moon etc. have been given. 7 ref.

176. Mohan, R.S. Lal 1969
(Central Marine Fisheries Research Institute, Regional Centre, Mandapam Camp, South India).
A synopsis of the Indian genera of the fishes of family Sciaenidae. Indian J. Fish., 16(1&2):82-98.

The author has classified 30 species of sciaenid fishes under 14 genera depending upon the structures of air bladder, otolith and sensony pores. 20 ref.

177. Mojumder, P. 1969
(Central Marine Fisheries Research Institute; Sub-station, Visakhaptnam, South India).
Food of the cat-fish, Tachysurus thalassinus (Ruppell). Ibid., 16(1 & 2):161-169.

Describes the results of studies on the food habit of the fish T. thalassinus collected from Waltair and further north areas of the Bay of Bengal. 4 ref.

178. Murty, A.V.S. 1969
(Central Marine Fisheries Research Institute, Cochin-11, South India).
A theoretical approach to the attenuation coefficient of light in sea water. Ibid., 16(1 & 2):151-155. 13 ref.

179. Muthu, M.S. 1969
(Central Marine Fisheries Research Institute, Substation, Madras-8).
Parapenaeopsis indica , sp. Nov. (Decapoda, Penaeidae) from the Indian waters. Ibid., 16(1 & 2):174-180.

Describes a new species of the genus Parapenaeopsis collected from Kakinada in the year 1968. 4 ref.

180. Nagabhushanam, R. & N. Vasantha 1971
(Zoology Department, Marathwada University, Aurangabad, India).
Moulting and colour changes in the prawn Caridina weberi. Hydrobiologia, 38(1):39-47.

Cyclic changes in the chromatophones present in the eye stalk of the prawn, in different stages of the moult cycle, have been discussed. 6 ref.

181. Nath, C.N. & N. Krishna Pillai 1971
(Marine Biology Laboratory, Trivandrum-7, India)
Studies on the genus Lepidomysis Clarke Crustacea; Mysidacea. Ibid., 37(2):285-300.

A revised definition of the genus Lepidomysis clarke, a key for the identification of the species and taxonomic position of the genus have been dealt with. 10 ref.

182. Pillai, V. Kunjukrishna & P.G. Jacob 1972
(Central Marine Fisheries Research Institute, Cochin-11, India).
Aquatic pollution. Seafd. export J., 4(5): 19-23.

Gives a general account of water pollution, its effects and control.

183. Pillai, V. Narayana & V.S. Ramachandran 1972
(Central Institute of Fisheries Operative, Cochin, India).
Some trends observed in the deep-sea lobster catches of the vessel "Blue fin" during the period January'69 to December'71. Ibid., 4(6):9-12.

184. Poddar, B.N. 1972
(Director of Fisheries, West Bengal)
An approach to the fifth five year plan for fisheries in West Bengal. Souvenir, Silver Jubilee of Indian Indipendence, Directorate of Fisheries, Govt. of West Bengal : 28-36.

185. Patro, J.C., T.S. Murty & Madan Gopal Rao 1968
(Office of the Director of Fisheries, Government of Orissa, Cuttack).
Note on the economics of production of fish seed of Indian major carps by adopting induced breeding technique. (Proceeding of the seminar on "Production of quality fish seed for fish culture" sponsored by ICAR at the CIFRI, Barrackpore,on November 1 & 2, 1968 : 262-268).

186. Qasim, S.Z[1] & P.M.A. Bhattathiri[2] 1971
([1]Central Marine Fisheries Research Institute, Cochin-11, India. [2]Biological Oceanography Division, National Institute of Oceanography, Ernakulam, Cochin-11, India).
Primary production of a seagrass bed on kavaratti atoll (Laccadives). Hydrobiologia, 38(1) :29-38. 19 ref.

187. Rama Rao K. V 1972
(Marine Biological Division, Zoological Survey of India, 3, Kandaswami Gramini, Madras-4).
New records of offshore Scorpaenid fishes, Pontinus tentacularis (Fowler), Ocosia vespa (Jordan & Starks) and Setarches longimanus (Alcock) from the Arabian sea. Curr. Sci., 41(7):268 pp. 4 ref.

188. Rao, C.R.S 1972
Base line data to check pollution. Sci. Reptr., 9(5):237-238.

A generalised report on environmental pollution.

189. Rao, D.S., N.P. Kunhikrishnan & R. Vasantha Kumar 1968
(Central Marine Fisheries Research Institute, Cochin-11).
Hydrological features of the Arabian sea off the northern and central west coast of India during 1964 winter. Indian J. Fish., 16(1&2):1-13.

The hydrographic features prevailing along the northern and central west coast of India during the early part of 1964 are discussed. 10 ref.

190. Rao, P. Vedavyasa 1969
(Central Marine Fisheries Research Institute, Cochin-11).
On the identification of juveniles of three species of Metapenaeus (Decapoda, Penaeidae). Ibid., 16(1 & 2):51-55.

Distinguishing characters of juveniles of three species of commercially important prawns namely, M. dobsoni, M. monoceros and M. affinis have been described. A key for identification of these species (juvenile stage) is also given. 7 ref.

191. Rao, V.S. 1971
(Hydrobiol Laboratory Department of Botany, Osmania University, Hyderabad-7, India).
An ecological study of three freshwater ponds of Hyderabad - India. I. The environment.
Hydrobiolgia, 38(2):213-223.

Ecological features of three freshwater ponds with special reference to the ionic composition and behaviour of the basic elements have been described. 30 ref.

192. Roy, B.N. 1972
(Deputy Secretary to the Govt. of West Bengal, Department of Fisheries)
Fish in West Bengal. (Souvenir, Silver Jubilee of Indian Indipendence, Directorate of Fisheries, West Bengal : 1-4

193. Roy Choudhury, A.K. 1972
(Superintendent of Fisheries, West Bengal)
Hilsa fishery and its conservation. Ibid, 20-22

A popular article deals with hilsa fisheries in West Bengal.

194. Saha, K.C. , J.C. Sengupta & A.N. Bhattacherya 1968
(Fisheries Technological and Research Laboratory, Govt. of West Bengal).
Limiting factors controlling the production of Indian major carp fry in nursery ponds.
(Proceeding of the seminar on 'Production of quality fish seed for fish culture' sponsored by ICAR at the CIFRI, Barrackpore on November 1 & 2, 1968 : 298-307). 7 ref.

195. Sekharan, K.V., M.S. Muthu, G. Sudhakara Rao & B. Narayana Rao. 1969
(Central Marine Fisheries Research Institute, Sub-station, Visakhapatnam, South India).
Spawning concentrations of the sardine, Sardinella gibbosa (Bleeker), off the North Andhra coast in March - April, 1969. Indian J. Fish., 16(1 & 2): 156-160. Ref 5.

196. Sengupta, R., A. Sengupta & D. Poddar 1972
(Fisheries Research Station, Kalyani, West Bengal).
Culture of air-breathing fish in West Bengal.
(Souvenir, Silver Jubilee of Indian Indipendence, Directorate of Fisheries, West Bengal : 17 - 19).

Gives an account of culture, food and feeding habit and breeding of some cat fishes in West Bengal.

197. Seshappa, G. 1969
(Central Marine Fisheries Research Institute, Substation, Cochin-5).
The problem of age determination in the Indian mackerel, Rastrelliger kanagurta, by means of scales and otoliths. Indian J. Fish., 16(1 & 2): 14-28.

Reports the results of scale study of R. kanagurta collected from different centres during the period 1955-67 & 1969-70. The ring formation is attributed to the physiological strain during the process of growth and ripening of gonads. Otoliths do not show any annuli. 21 ref.

198. Shetty, H.P.C. 1968
(Central Inland Fisheries Research Substation, Allahabad-2, U.P.).
On the need for intensive spawn prospecting in Indian rivers. (Proceeding of the seminar on 'Production of quality fish seed for fish culture' sponsored by ICAR at the CIFRI, Barrackpore on November 1 & 2, 1968 : 92-99). 9 ref.

199. Shetty, H.P.C., J.C. Malhotra and K.K. Ghosh 1968
(Central Inland Fisheries Research Substation, Allahabad-2, U.P.).
Efficiency and selectivity of shooting nets in riverine spawn collection. Ibid, : 100-122. 4 ref.

200. Shetty, H.P.C., K.K. Ghosh, Ravish Chandra, A.G. Jhingran, Prem Shankar Prasad, D.V. Pahwa, V.R. Desai, K.V. Rao, M. Sinha, A.G. Godbole, L.H. Rao, G.R. Rao, S.D. Gupta, S.C. Pathak, S.K. Tewari, Devendra Prasad and R.K. Saxena 1971
(Central Inland Fisheries Research Institute, (Indian Council of Agricultural Research), Barrackpore, West Bengal, India).

Report on fish prospecting investigations, 1969 Rajasthan, Uttar Pradesh, Bihar, Assam, Tamil Nadu and Mysore, Bull. cent. Inl. Fish. Res. Inst. Barrackpore, (16): 49 p.

The results of spawn prospecting investigations in the rivers Yamuna, Son and Ganga have been dealt with. Inter-relationship between the rivers Son and Ganga in regard to spawn availability has been discussed.

201. Shetty, H.P.C., K.K. Ghosh, Ravish Chandra, A.G. Jhingran, K.V. Rao, M. Sinha, A.G. Godbole, N.K. Srivastava, S.C. Pathak, S.K. Das and R.K. Saxena, 1971
(Central Inland Fisheries Research Institute, Indian Council of Agricultural Research, Barrackpore, 24-Parganas, West Bengal, India)
Report on fish spawn prospecting investigations, 1970 Assam, West Bengal and Uttar Pradesh.
Ibid, (17): 43 p.

Describes in detail the magnitude and quality of spawn spurts at several spots of investigation on the rivers Brahmaputra, Ganga, Kangsabati & Yamuna in Assam, West Bengal, Bihar and Uttar Pradesh.

202. Shetty, H.P.C., K.K. Ghosh, K.V. Rao, M. Yusuf Kamal, P. Das, S.K. Wishard, S.D. Gupta, N.K. Srivastava & P.M. Mathew 1971
(Central Inland Fisheries Research Institute, Indian Council of Agricultural Research, Barrackpore, West Bengal, India).
Report on fish spawn prospecting investigations, 1971 Assam, Bihar, West Bengal and Uttar Pradesh.
Ibid, (18) : 35 p.

Describes in detail the results of spawn prospecting in the rivers Brahmaputra, Kangsabati, Ganga and Yamuna in the states of Assam, Bihar West Bengal and Uttar Pradesh.

203. Singh, S.B. 1968
(Pond Culture Substation, Cuttack of the Central Inland Fisheries Research Institute, Barrackpore). Production of common carp seed. (Proceeding of the seminar on 'Production of quality fish seed for fish culture' sponsored by ICAR at the CIFRI Barrackpore, on November 1 & 2, 1968 : 286-296. 9 ref.

204. Sinha, V.R.P. 1972
(Central Inland Fisheries Research Institute, Barrackpore).
Composite fish culture of Indian and exotic carps in India. Sovenir, Silver Jubilee of Indian Indipendence, Directorate of Fisheries, Govt. of West Bengal : 5-9.

205. Subrahmanyam, M. 1972
(Department of Zoology, Andhra University, Waltair, India).
Experimental studies on growth in Penaeus monodon Fabricius. Seafd. export J., 4(6): 13-19.

206. Suseelan, C.[1] & K.V. Somasekharan Nair,[2] 1969
([1]Central Marine Fisheries Research Institute, Centre, Colachel. [2]Central Marine Fisheries Research Institute, Substation, Kozhikode).
Food and feeding habits of the demersal fishes off Bombay. Indian J. Fish., 16(1 & 2):56-74. 25 ref.

207. Tampi, P.R.S. 1968
(Scientist (Fisheries Science), Indian Council of Agricultural Research, Krishi Bhavan, New Delhi-1). Quality seed for Chanos fish farms. (Proceeding of the seminar on 'Production of quality fish seed for fish culture' sponsored by ICAR at the CIFRI, Barrackpore, on November 1 & 2, 2968 :222-231). 7 ref.

208. Tripathi, Y.R. 1968
(Director of Fisheries, Government of Uttar Pradesh, Lucknow).
Collection of naturally produced fish seed from lakes. Ibid ,: 174 - 184.

Describes the usefulness of ecosounder in lacating the breeding ground and spawning sites of Indian major carps in lakes. The details of eggs/spawn collected, depth of water at the breeding sites, species composition etc are described. 8 ref.

209. Zutshi, D.P.[1] & K.K. Vass[2] 1971
([1]Department of Botany, S.P. College, Srinagar. [2]Kashmir University, Srinagar, India).
Ecology and production of Salvinia natans Hoffim; in Kashmir. Hydrobiologia, 38(2):303-320.

Gives an account of the distribution and conditions of growth of S. natans in Kashmir lakes. The authors have suggested some methods for controlling the species. 29 ref.

II. AUTHOR INDEX

Every author's name appearing in the original article is listed alphabatically, including corporate bodies (societies, organisations etc.), whether occurring as single or multiple words. (Reference is given to the serial no. of the entry).

Annigeri, G.G.	...	121
Anon	...	122
Antony Raja, B.T.	...	123
Aravindan, C.M.	...	124
Banerjee, M.K.	...	125
Banerjee, R.K.	...	126
Barua, A.B.	...	127
Bhatt, V.S.	...	128
Bhattacharya, A.N.	...	194
Bhattathiri, P.M.A.	...	186
Bhimachar, B.S.	...	129
Chakraborty, D.P.	...	130
Chakrabarty, R.D.	...	125
Chandra, R.	...	200 & 201
Chaudhuri, H.	...	131
Chauhan, B.S.	...	132
Chennubhotla, K.V.S.	...	133
Choodamani, N.V.	...	134
Choudhuri, N.K.	...	135
Choudhuri, P.C.	...	136
Das, N.K.	...	137
Das, P.	...	202
Das, S.K.	...	201
David, A.	...	138
Davis, T.A.	...	139
De, S.	...	140
Desai, B.N.	...	141
Desai, V.R.	...	200
Devadoss, P.	...	142
Devaraj, K.V.	...	143
Dharma Raja, S.K.	...	146
Dhawan, R.M.	...	144
Dubey, G.P.	...	145
Durve, V.S.	...	146

Ernakulam, Central Institute of Fisheries Technology	...	147
Ghosh, K.K.	...	173,199,200, 201 & 202
		148
Ghosh, N.	...	149
Ghosh, S.N.	...	200 & 201
Godbole, A.G.	...	150
Gokhale, S.V.	...	171
Gopal Dutt, N.H.	...	151,152,153
Gopalakrishnan, V.	...	& 154
		144
Gopinathan, V.G.	...	155
Govindan, T.K.	...	200 & 202
Gupta, S.D.	...	156 & 182
Jacob, P.G.	...	157,200 & 201
Jhingran, A.G.	...	154,158,159,
Jhingran, V.G.	...	160 & 161
		162
Jyoti, M.K.	...	165
Kachroo, P.	...	163 & 164
Kagwade, P.V.	...	202
Kamal, M.Y.	...	165
Kant, S.	...	174
Kesavan Nair, A.K.	...	166 & 167
Kewalramani, K.M.	...	168
Khan A.A.	...	169
Khan, J.	...	170
Khan, R.R.	...	132
Khoche, B.Y.	...	181
Krishna Pillai, N.	...	171
Krishnamurthy, C.G.	...	172
Kulkarni, C.V.	...	189
Kunhikrishnan, N.P.	...	173 & 199
Malhotra, J.C.	...	162
Malhotra, Y.R.	...	174
Mathew, K.J.	...	202
Mathew, P.M.	...	175
Mitra, G.N	...	176
Mohan, R.S.Lal.	...	177
Mojumder, P.	...	178
Murty, A.V.S.	...	185
Murty, T.S.	...	

Muthu, M.S.	...	179 & 195
Nagabhushanam, R.	...	180
Namboothiri, P.V.S.	...	144
Nandy, A.C.	...	130
Narayana Rao, B.	...	195
Nath, C.N.	...	181
Padmanabhan, K.G.	...	124
Pahwa, D.V.	...	200
Panday, M.R.	...	145
Pathak, S.C.	...	200 & 201
Philipose, M.T.	...	130
Pillai, V.K.	...	182
Pillai, V.N.	...	183
Poddar, B.N.	...	184
Poddar, D.	...	196
Potro, J.C.	...	185
Prasad, D.	...	200
Prasad, P.S.	...	200
Qasim, S.Z.	...	186
Rajasexharasetty, M.R.	...	171
Rama Rao, K.V.	...	187
Ramachandran, V.S.	...	183
Ramanujacharyulu, C.	...	139
Rao, C.R.S.	...	188
Rao, D.S.	...	189
Rao, G.R.	...	200
Rao, K.V.	...	200,201 & 202
Rao, L.H.	...	200
Rao, M.G.	...	185
Rao,P.V.	...	190
Rao, R.M.	...	153
Rao, V.S.	...	191
Roy, B.N.	...	192
Roy, P.	...	120
Roychoudhury, A.K.	...	193
Saha, K.C.	...	194
Saxena, R.K.	...	200 & 201
Sekharan, K.V.	...	195
Sengupta, A.	...	196
Sengupta, J.C.	...	194
Sengupta, R.	...	196
Seshappa, G.	...	197
Shetty, H.P.C.	...	173,198,199, 200,201 & 202

Siddiqui, A.Q.	...	168 & 169
Sing, H.T.	...	127
Singh, A.	...	145
Singh, S.B.	...	203
Singit, G.S.	...	126
Sinha, M.	...	200 & 201
Sinha, V.R.P.	...	204
Somasekharan Nair, K.V.	...	206
Srivastava, N.K.	...	201 & 202
Subrahmanyam, M.	...	205
Sudhakara Rao, G.	...	195
Suseelan, C.	...	206
Tampi, P.R.S.	...	207
Tewari, S.K.	...	200
Tripathi, S.D.	...	161
Tripathi, Y.R.	...	208
Vasantha, N.	...	180
Vasantha Kumar, R.	...	189
Vass, K.K.	...	209
Wishard, S.K.	...	202
Zutshi, D.P.	...	209

III. Subject Index

(Subject headings with their sub-headings are listed alphabetically. Reference is given to the serial number of the entry)

BEHAVIOUR : 143
BENTHOS :
Zoobenthos 141
BIOCHEMISTRY : .... 127,146 & 171
DISTRIBUTION & ECOLOGY 187
FISH CULTURE
Freshwater fish culture .... 196 & 204
FISH PATHOLOGY .... 124,132 & 154
FISH POISONS: 130
FISH SEED : .... 129,131,134, 137,138,145, 151,159,172, 173,175,194, 198,199,203, 207,& 208
FISHERIES SURVEYS & INVESTIGATIONS : 174
FISHERIES BIOLOGY & POPULATION DYNAMICS : .... 121,123,128, 142,155,157, 162,163,164, 166,177,193, 195, 197 & 206
FISHERY ECONOMICS: .... 145 & 185
FISHING METHODS & GEAR
Line fishing 144
Nets & net fishing 125
GENERAL REPORTS : .... 122,135,140, 147,148,149, 150,158,160, 161,167,184, 192,200,201 & 202
HYDROGRAPHY, METEOROLOGY & GENERAL ECOLOGY
Inland waters .... 191 & 209
Marine waters 189
MISCELLANEOUS FISHERIES 170
MORPHOLOGY, ANATOMY & HISTOLOGY: 124

PLANKTON		
General	....	169
Phytoplankton	....	133 & 165
Productivity	....	168 & 186
POND FERTILIZATION & SOIL CHEMISTRY		
General	....	126
SHELL FISH FISHERIES:		
Crustacean fisheries	....	136,152,153, 156,180,183, 190 & 205
Molluscan fisheries	....	146
STATISTICS	....	139 & 178
SYSTAMATICS		
Crustaceans	....	179
General	....	181
Fishes	....	176
WATER POLLUTION :	....	182 & 188

IV TAXONOMIC INDEX

(Based on the taxonomic terms of the Fishes, Frogs, Prawns & Crabs occuring in the title and also in the body of the paper. The names of other groups appear as per their taxonomic status in the Animal Kingdom. Names of the authorities have been omitted from taxonomic terms).

Acetes indicus	....	151
Ailia coila	....	127
Amphipnous cuchia	....	127
Anchoviella sp.	....	151
Anabas testudenius	....	196
Anquilla bengalensis	....	134
Argyrosomus hololepidotus	....	176
Arius dussumieri	....	206
A. jella	....	206
A. thalassinus	....	206
Aspidoparia morar	....	138
Atrobucca nibe	....	176
Bagarius bagarius	....	138
Bemprops caudimacula	....	183
Barilius spp.	....	138
Caranax sansum	....	144
Caridina weberi	....	180
Catla catla	....	126, 129, 131, 134, 137, 138, 145, 149, 158, 159, 160, 161, 194, 200, 201, 202 & 204
Centripristis sp.	....	183
Channa gachua	....	196
C. marulius	....	134, 167 & 196
C. punctatus	....	127 & 196
C. striatus	....	134, 167 & 196
Chanos chanos	....	167 & 207
Chirocentrus dorab	....	125 & 144
Chlorophthalmus sp.	....	183

Chorinemus lysan	....	144
Cirrhinus cirrhosa	....	134,137,138, 159,167 & 200
C. mrigala	....	126,129,131, 134,137,138, 145,149,158, 159,160,161, 167,194,200, 201,202 & 204
C. reba	....	127,134,138 167 & 200
Clarias batrachus	....	143,149 & 196
Clupisoma garua	....	127
Colisa fasciata	....	127
Corvina axillaris	....	176
C. semilucatusa	....	176
Crossocheilus latius	....	127
Ctenopharyngodon idella	....	131,149,158, 160,161 & 204
Cubiceps sp.	....	183
Cyprinus carpio	....	126,149,158, 167,203 & 204
Dendrophysa russelli	....	176
Eleutheronema tetradactylum	....	151
Emmelichthys sp.	....	183
Eninulla orientalis	....	183
Etroplus suratensis	....	134,151 & 167
Euthynnus affinis	....	144
Eutropiichthys vacha	....	127
Glossogobius giuris	....	127
Harpodon nehereus	....	151 & 155
Heteropneustes fossilis	....	127 & 196
Hilsa ilisha	....	125 & 151
Hilsa sp.	....	193
Holocentrus soldado	....	176
Hypophthalmichthys molitrix	....	131,158,161 & 204
Ilisha elongata	....	151
I. filigera	....	206

Johnieops bleekèri	....	176
J. osseus	....	176
J. sina	....	176
J. vogleri	....	176
Johnius aneus	....	206
J. axillaris	....	206
J. belengerii	....	176
J. carutta	....	176 & 206
J. coiter	....	176
J. dussumieri	....	142,176 & 206
J. glaucus	....	176
J. macropterus	....	176
J. maculatus	....	176
Labeo bata	....	138,167 & 200
L. calbasu	....	129,134,137, 138,159,160, 167,194,200, 201 & 202
L. dero	....	159
L. dyocheilus	....	159
L. fimbriatus	....	134,137,138, 159 & 167
L. gonius	....	159
L. kontius	....	134,138,159 167 & 200
L. porcellus	....	138
L. rohita	....	126,129,131, 134,137,145, 158,159,160, 161,167,185, 194,200,201,202 & 204
Lates calcarifer	....	151 & 153
Liza troschelli	....	158
Lutjanus diacanthus	....	176
Macrobrachium carcinus	....	136
M. lamarrei	....	151
M. malcolmsonii	....	151 & 158
M. mirabile	....	151
M. rosenbergii	....	151,152 & 158
M. rude	....	151 & 152
M. villosimanus	....	151
Macrospinosa cuja	....	176
Mastocembelus armatus	....	127
M. pancalus	....	127
Mastocembelus spp.	....	138

Metapenaeus affinis	....	156,174 & 190
M. brevicornis	....	151,152 & 153
M. dobsonii	....	152,156,174 & 190
M. monoceros	....	151,152,153 156,174 & 190
Mugil cephalus	....	158,161 & 167
M. corsula	....	134 & 151
M. parsia	....	151
Mugil spp.	....	153
M. tade	....	151
Muraenesox talabonoides	....	164,168 & 206
Mystus aor	....	134
M. cavasius	....	127,128 & 138
M. gulio	....	153
M. punctatus	....	134 & 138
M. seenghala	....	134
M. vittatus	....	127 & 138
Nandus nandus	....	127
Nemipterus japonicus	....	174
Nemipterus spp.	....	174
Nibea albida	....	176
N. diacanthus	....	176
Notopterus notopterus	....	138
Ocosia vespa	....	167
Ompok bimaculatus	....	138
O. pabo	....	127
Osphronemus goramy	....	158 & 167
Osteobrama vigorsii	....	138
Otolithoides biauritus	....	176
O. brunneus	....	176 & 206
O. pama	....	176
Otolithus argenteus	....	176
O. aureus	....	176
O. maculatus	....	176
O. ruber	....	142,176 & 206
Palaemon rudis	....	151
P. styliferus	....	151,152 & 153
Pama pama	....	151
Pamadasys hasta	....	168 & 206
Pampus argenteus	....	125 & 168
Pangasius pangasius	....	134 & 138
Panna microdon	....	176
Parapenaeopsis indica	....	179
P. sculptilis	....	151,152,153 & 156
P. stylifera	....	174
Parastromateus niger	....	166

Penaeus indicus	....	151,152,153, 156 & 174
P. monodon	....	151,152,153, 156,174 & 205
Pennahia anea	....	176
Polydactylus indicus	....	166 & 206
Polynemus heptadactylus	....	163 & 206
P. paradiseus	....	151
Pontinus tentacularis	....	187
Pseudeutropius taakree	....	138
Pseudosciaena diacanthus	....	166 & 206
Puerulus sewelli	....	183
Puntius carnaticus	....	134,138 & 159
P. dobsonii	....	138
P. dubius	....	134 & 159
P. hexagonolepis	....	134
P. kolus	....	138
P. sarana	....	127,134 & 138
P. stigma	....	138
Rana hexadactyla	....	158
R. tigrina	....	158
Rasbora daniconius	....	171
Rastrelliger kanagurta	....	197
Rhinomugil corsula	....	127
Sardinella gibbosa	....	195
S. longiceps	....	121 & 123
Schizothorax niger	....	162
Sciaena cirrosa	....	176
S. dussumieri	....	206
S. umbra	....	176
Scomberomorus commersoni	....	144
S. guttatus	....	125
Setarches longimanus	....	187
Setipinna phasa	....	151 & 157
Silonia silondia	....	134
Sphyraena sp.	....	144
Tachysurus thalassinus	....	177
Thrissocles dussumieri	....	132
T. malabarica	....	206

Thynnus macropterus	....	144
Tilapia mossambica	....	124
Umbrina sinuata	....	176
Wallago attu	....	134 & 138
Xenentodon cancila	....	127

SERIAL INDEX

(Serials are abbreviated according to FAO's World list of Periodicals for Aquatic Sciences and Fisheries "and Insdoc's" Directory of Indian Scientific Periodicals,1968" Reference is given to the serial number of the entry)

* Foreign
\# Reprint

Bull. cent. Inl. Fish. Res. Inst. Barrackpore, 1971,	16		...	200
	17		...	201
	18		...	202
* Crustaceana, 1971	20	(1)	...	136
Curr. Sci., 1972	41	(7)	...	124,143 & 187
Ernakulum, Central Institute of Fisheries Technology, Half yearly Report, 1971			...	147
* Hydrobiologia, 1971	37	(2)	...	181
	37	(3-4)	...	168 & 169
	38	(1)	...	180 & 186
	38	(2)	...	128,191 & 209
Indian J. Biochem. Biophys. 1972,	9	(1)	...	127
Indian J. exp. Biol.1972	10	(1)	...	130,162 & 171
Indian J. Fish, 1969	16	(1&2)	...	121,123,125, 126,133,142, 144,146,163, 164,174,176-179,189,190, 195,197 & 206
J. Bombay nat. Hist. Soc. 1971	68	(2)	...	141
Proc. Indian nat. Sci. Acad (B), 1971	37	(4)	...	157 & 165
Prpceeding of the seminar on "Production of Quality Fish Seed for Fish Culture" sponsored by ICAR at the CIFRI, Barrackpore, on November, 1&2, 1968			...	129,131,134,137, 138,145,151, 153,159,172, 173,175,185, 194,198,199, 203,207 & 208

Proceedings of the Symposium on "Science and India's Food Problem" organised by Indian Council of Agriculture Research and Indian National Science Academy 1967	...	154,158 & 161
Proc. zool. Soc., Calcutta 1971, 24 (1)	...	132
Sankhya(B), 1971, 33 (3&4)	...	139
Sci. Reptr, 1972 9 (4)	...	170
9 (5)	...	188
Seafd Export J. 1972 4 (4)	...	150 & 156
4 (5)	...	166 & 182
4 (6)	...	122,155,167, 183 & 205
Souvenir, Silver Jubilee of Indian Indipendence, Directorate of Fisheries, West Bengal 1972	...	135,140,148, 149,152,160, 184,192,193, 196 & 204